

Environmental and Social Review Summary (ESRS)

Project Name:	Innovating Sustainable Materials from Invasive Algae from the Caribbean to Tackle Plastic Pollution
Project Number:	ME-G1035
Project Location:	Mexico
Executing Agency:	BioPlaster Research SAPI de CV
Type of Operation:	Non- Remboursable Investment Grant (NRIG)
ESRS Issuance Date:	August 2026

1. General Information on the Project and Overview of Scope of IDB Lab's Review

BioPlaster Research S.A.P.I. de C.V. ("BioPlaster" or the "Company") is a biotechnology company that focuses on transforming sargassum and other algae-derived inputs into biodegradable biomaterials with potential applications in flexible packaging, films, bags, foams, and other sustainable material solutions that can replace conventional fossil-based plastics.

The "Transaction" or the "Project" consists of a Non-Reimbursable Investment Grant (NRIG) to support BioPlaster strengthen a scalable sargassum-to-bioplastics value chain in the Mexican Caribbean. The Project seeks to support the development of local extraction of alginate from sargassum for the local commercial bioplastic manufacturing, thus minimizing the importation of alginate while increasing the competitiveness and scalability of commercial bioplastic in Mexico.

This Environmental and Social Due Diligence (ESDD) consisted of a review of relevant available documents submitted by BioPlaster and information obtained during videoconferences with the key Company's personnel.

2. Environmental and Social Categorization and Rationale

In accordance with the IDB's Environmental and Social Policy Framework, the Transaction has been classified as Category B because it could have moderate and mitigatable environmental and social (E&S) impacts, which may include: i) labor and working conditions; ii) contractors' E&S and Occupational Health and Safety (OHS) risks, iii) generation of solid and liquid waste; iv) air emissions and noise; and v) supply chain risks.

The Environmental and Social Performance Standards (ESPS) triggered by the Transaction are i) ESPS1: Assessment and Management of Environmental and Social Risks and Impacts; ii) ESPS2: Labor and working conditions; iii) ESPS3: Resource Efficiency and Pollution Prevention; and iv) EPS10: Stakeholder Engagement and Information Disclosure. ESPS4, ESPS5, ESPS6, ESPS7, ESPS8, and ESPS9 do not apply to this Transaction because there is no land acquisition/involuntary resettlement and no adverse impacts are expected on local communities, biodiversity, indigenous peoples or cultural heritage. If, in the future, any of these ESPS is determined to be applicable to the Project, a corrective action plan will be developed.

3. Compliance with national environmental and social laws and regulations

BioPlaster's two facilities in Mérida, a research lab and a pilot flexible bioplastics facility, operate in compliance with Mexican laws. For the future processing facility which will be located within the proposed Puerto Morelos' Circular Economy Development Hub for Well-being (PODECIBI), the Company will obtain

applicable licenses and authorizations for the operations of the future facility. BioPlaster's local partners are well established institutions that operate in accordance with local laws and regulations.

4. Environmental and Social Context

The proposed project is part of the IDB Lab's portfolio of projects under the Regional Innovation Facility for Sargassum, which seeks to valorize sargassum as a valuable resource for various industries, while mitigating the environmental and economic impacts on vulnerable coastal areas and strengthening the resilience of coastal communities. The Project contributes to the reduction of environmental and public health risks posed by the decomposition of sargassum, which releases methane and other air pollutants when dumped in landfills or left on beaches. The project will primarily benefit workers, local enterprises, and coastal communities in Quintana Roo through the development of a domestic sargassum-to-alginate value chain that supports the production of sustainable bioplastics.

BioPlaster will focus on the extraction of alginate from sargassum for the local commercial bioplastic manufacturing and will source sargassum biomass from companies and organizations that already conduct offshore and nearshore collection of sargassum in the Quintana Roo area. These organizations play different roles in the emerging sargassum network, including biomass sourcing, offshore or nearshore collection solutions and technologies, preprocessing, and drying, as well as community engagement, and market structuring. BioPlaster may also partner with a Company that supports the development of a structured sargassum marketplace, helping connect biomass suppliers with industrial buyers, and improving transparency, traceability, and commercial coordination across the supply chain.

BioPlaster will serve as the Executing Agency and will be responsible for the Project's overall implementation and coordinating with local partners.

BioPlaster currently operates a research lab and a pilot flexible bioplastics facility in Mérida, Mexico. The project's scale-up pathway is expected to rely on the future development of PODECEBI, which will be led by the Quintana Roo Government as an enabling industrial park for companies working on sargassum valorization.

5. Environmental and Social Risks and Impacts and Proposed Mitigation Measures

Assessment and Management of Environmental and Social Risks and Impacts (ESPS 1):

The Company is in the early stages of developing an Environmental and Social Management System (ESMS) that will include E&S and OHS policies, plans and procedures in accordance with the requirements of IDB's ESPS1.

Policy: BioPlaster has developed a comprehensive sustainability policy that describes the Company's commitment to E&S and OHS principles and will guide BioPlaster's operations. This Policy is aligned with the principles of the IDB's ESPS1 and will be implemented through the ESMS that is currently under development.

Identification of Risks and Impacts: BioPlaster will develop and implement a Risk Identification and Impact Assessment Process that is tailored to the potentials E&S and OHS risks and impacts associated with the Company's research development and pilot flexible bioplastics operations as well as sargassum biomass supply chain.

Management Programs: Following the assessment of E&S and OHS risks and impacts, the Company will develop and implemented the necessary plans to manage the risks and impacts associated with its operations in Mexico.

Organizational Capacity and Competency: BioPlaster indicates that the Company will hire a Chief Sustainability Officer who will lead the Company's sustainability initiatives and commitments.

Emergency Preparedness and Response Plan (EPRP): BioPlaster will develop and implement an EPRPs for its research lab and pilot flexible bioplastics operations in Mexico. The EPRPs will address potential emergencies, including fires, explosions, chemical spills, natural disasters (earthquakes, hurricanes, floods,

as appropriate), medical emergencies, bomb threats, and acts of violence. The EPRPs also include contacts of external institutions that can support the emergency response efforts, risk maps, resources/equipment needed as well as staff training and drills.

Monitoring and Review: BioPlaster publishes an annual impact report that presents the Company's services and biomaterials. This report discloses information on greenhouse gas (GHG) emissions from the valorization of algae and seaweed and support to local coastal communities. For this Transaction, BioPlaster will establish, track, and measure specific key performance indicators ("KPI"), including the number of grievances, electricity and water consumption, waste generation, GHG emissions, and jobs created. These KPIs will be submitted to the IDB Lab annually.

Labor and Working Conditions (ESPS 2):

As of August 2026, BioPlaster reports nine direct workers in Mexico, of which seven are women. The Company also reports that about 15 local consultants and service providers support BioPlaster's operations in Mexico. The Project is expected to create 18 new direct jobs as the Company scales up alginate production.

Human Resources Policies and Procedures: The Company will update its HR policy and clearly state its commitment to the principles of non-discrimination, the rejection of child and forced labor, and the right to join unions, in accordance with the requirements of ESPS2 and the Mexican labor laws. Employees will receive documented, clear, and understandable information regarding their rights under labor laws, including working hours, wages, overtime, compensation, retirement, and other benefits.

Grievance Mechanism: BioPlaster will develop and implement an integrated grievance mechanism that allows for anonymous complaints and is available for internal and external stakeholders. The Company's grievance mechanism will be compliant with the requirements of the IDB's ESPS2.

Occupational Health and Safety (OHS): The Company has identified key OHS risks as well as Mexican requirements that apply to its research lab and pilot flexible bioplastics operations. These internal OHS rules can be expanded to become more easily implementable, to prevent occupational accidents and illnesses and ensure safe working place and operations.

Primary Supply Chain: Offshore and nearshore sargassum collection, drying and processing will be conducted by third party organizations and companies already operating in the area. BioPlaster will develop a supply chain risk mapping and monitoring protocol to ensure good supply chain practices, including controls to exposure to hydrogen sulfide and other safety practices during collection.

Resource Efficiency and Pollution Prevention (ESPS 3):

BioPlaster produces alginate from sargassum via an eco-friendly modified version of the conventional alkaline extraction method. The Company currently has a research lab and a pilot flexible bioplastics facility in Mérida. As part of this transaction, BioPlaster is expected to have a future processing facility in the proposed industrial hub PODECIBI in Puerto Morelos, which will be constructed by the Quintana Roo Government.

Resource Efficiency: The research and the pilot flexible bioplastics are connected to the national grid for the supply of energy. The Company plans to install solar panels as an effort to reduce the carbon footprint associated with BioPlaster's manufacturing operations. Water is provided by the local water and sanitation company and BioPlaster reports using approximately 200 liters of water per each batch of alginate. Although the Company does not currently have formal water and energy efficiency plans, BioPlaster states its commitment to develop these as part of this Transaction, as the Company is expected to scale up its operations.

Greenhouse Gas Emissions (GHG): BioPlaster already applies life-cycle assessments (LCA) and calculates the carbon footprint for all of its processes and materials. The Company discloses the results through its impacts reports.



Air Emissions: The research lab and pilot flexible bioplastics operations are not significant sources of regulated air emissions. The Company will receive dried sargassum biomass ready for the extraction of alginate, thus there is no drying or pre-processing of the sargassum at BioPlaster facilities. The amounts of volatile organic compounds (VOCs) and particulate matter (PM) generated during alginate processing is mitigated through standard engineering controls.

Liquid and Solid Waste Management: BioPlaster relies on the service of a waste management company for the collection and disposal of wastes at its research lab and will adopt the same waste management model at its pilot flexible bioplastics facility. The Company reports to operate in compliance with Mexican regulation for the proper handling and recycling waste generated during production. As part of this Transaction, as the Company scales up its alginate production, the Company will formalize its integrated waste management program including handling of hazardous waste.

Hazardous Materials Management – Hazardous materials include reagents used in the alginate extraction and manufacturing of bioplastics. The Company maintains safety data sheets, which presents information regarding potential risks associated with these substances and response in case of worker's exposure. As part of this Transaction, BioPlaster will formalize its hazardous materials management program.

Biodiversity Conservation and Sustainable Management of Living Natural Resources (ESPS6)

Although offshore and nearshore sargassum removal is considered environmentally beneficial, because excessive accumulation and decomposition of sargassum can adversely affect coastal habitats, in some instances, additional protective measures during sargassum collection may be required. The coastline of Quintana Roo is well known for populations of various species of sea turtles, as well as their nesting areas and nearshore coral reefs.

BioPlaster does not directly collect offshore or nearshore sargassum as the Company purchases dried and pre-processed sargassum biomass from qualified suppliers or collection partners. BioPlaster recognizes that offshore and nearshore sargassum collection may create potential biodiversity risks and will require sargassum suppliers and collection partners involved in offshore or nearshore collection to develop and implement biodiversity protection procedures as a condition of engagement; this is part of the supply chain risk mapping and monitoring protocol mentioned under ESPS2.

Stakeholder Engagement and Information Disclosure (ESPS 10)

BioPlaster has a website with contact information and relevant information regarding its products and operations. The Company also prepares and discloses impact reports that present information on carbon footprint, planned sustainability initiatives and social programs. BioPlaster is not directly involved in the sargassum collection operations that take place offshore and nearshore, along the coast of Quintana Roo. BioPlaster will source the dried and processed sargassum biomass from local companies already operating in the area. As part of the Company's commitments to local communities, BioPlaster has established a pilot collaborative partnership with the community of Mahahual to secure the resources for the community to implement sargassum collection and preprocessing capabilities. BioPlaster will monitor the performance of this social initiative through indicators such as improvement in household income, number of jobs generated, volume of sargassum collected, among other indicators.

As part of this Transaction, BioPlaster will develop and implement an external grievance mechanism aligned with IDB ESPS 1 and ESPS10 requirements.

5. Environmental and Social Action Plan (ESAP)

To fully implement the obligations of the ESAP in accordance with IDB ESPS requirements, each of its elements must be reviewed in relation to the specific description provided in this ESRS.

No	Requirement	Activity	Deliverable	Date
1	Management Programs	Expand or develop the following management plans to address identified risks: Emergency Preparedness and Response Plan. Including contacts of external institutions, resources, equipment needed, staff training and drills. Waste management plan to store, transport and recycle and/or dispose of wastes. Hazardous Materials Management procedure. OHS Programs Monitoring and Review	EPRP, Solid Waste Management Plan, Hazardous Materials Procedure, OHS programs and Monitoring and Review plan.	T+150 days
2	Human Resources Policy	Update HR policy in accordance with the requirements of ESPS2 and the Mexican labor laws.	Updated HR Policy	T+60 days
3	Grievance Mechanism	Develop and Implement grievance mechanisms for workers and external communities	Grievance Mechanism Manual	T+150 days
4	Primary Supply Chain	Develop a supply chain risk mapping and monitoring protocol to ensure good supply chain practices.	Supply chain procedure	T+120 days